

**UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

RESONANT SYSTEMS, INC., d/b/a
RevelHMI,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA,
INC.,

Defendants.

Case No. 2:22-cv-00423

JURY TRIAL DEMANDED

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Dkt. 69, Ex. 2	U.S. Patent No. 9,941,830 (“’830 patent”)
Dkt. 69, Ex. 3	Declaration of Dr. Richard Hooper, RevelHMI’s claim construction expert (“Hooper Decl.”)
Dkt. 69, Ex. 4	Declaration of Dr. Clifton Forlines, Samsung’s claim construction expert (“Forlines Decl.”)
Dkt. 69, Ex. 5	Deposition transcript of Clifton Forlines (“Forlines Tr.”)
Dkt. 69, Ex. 6	Dictionary of Computing, Sixth Ed., 146 (2010) (SAMRES_00053905)
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Dkt. 69, Ex. 9	Lowes webpage for “Tubes,” https://www.lowes.com/pl/Tubes-Metal-rods-shapesheets-Hardware/2641124591 , printed on Nov. 1, 2023
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I. INTRODUCTION

The terms proposed for construction fall into three categories, each that may only be resolved by the Court (i.e., cannot be sent to the jury to resolve). The first is where the parties dispute the scope of the term(s). For example, Plaintiff Resonant Systems, Inc. (“Plaintiff”) asserts that a “tube” can be a rectangle while Samsung asserts it must be cylindrical. The second are a group of terms related to Plaintiff’s request for judicial correction. However, as detailed below, because there are multiple equally plausible corrections (and the corrections would affect the scope), the terms cannot be changed and the claim scope is not reasonably certain. Finally, the third, are terms to be construed under 35 U.S.C. § 112 ¶ 6.

II. BACKGROUND

The ’081 patent and ’830 patent (“Asserted Patents” or “patents”) share a common specification¹ and relate to linear vibration modules and linear-resonant vibration modules.² ’081 patent, Abstract. These modules are linear in that the vibrational forces are produced by a linear oscillation of a component within the module as opposed to an unbalanced weight. *Id.*, 4:17-23. Plaintiff asserts that Samsung infringes claims 1-8 and 17 of both patents.

III. LEVEL OF ORDINARY SKILL IN THE ART

The parties dispute the definition of a person of ordinary skill in the art (“POSITA”). Specifically, Samsung proposes (based on the opinions of its expert, Dr. Forlines) that a person of ordinary skill in the art (“POSITA”) would have a bachelor’s degree in electrical engineering, mechanical engineering, computer science, or a similar field and **two years of experience related to electronic consumer product design**. Forlines Decl. ¶ 18. For purposes of institution,

¹ For brevity, citations in this brief are to the ’081 patent only unless otherwise noted.

² Samsung reserves the right to raise § 112 arguments because the ’830 patent claims are not limited to “linear.”

this is the level accepted by the PTAB in its recently instituted IPRs. Ex. 12, 23-24; Ex. 13, 7.

The dispute is whether, as Plaintiff contends, the two years of professional experience must be with **electro-mechanical control systems** or similarly relevant industry experience. Dkt. 69, 2; Hooper Decl. ¶ 23. While Plaintiff proffers this ostensibly narrower definition, it does not explain why Samsung’s proposed definition is wrong—and why narrowing to “electro-mechanical control systems” is necessary. In contrast, as Dr. Forlines explained at his deposition, the technology of the Asserted Patents is “not overly sophisticated” and could be addressed by a POSITA with relevant consumer product design experience, even if that experience did not relate directly to mechanical systems. Forlines Tr., 23:20-24:1, 25:5-17.

IV. DISPUTED TERMS FOR CLAIM CONSTRUCTION

A. “vibration module” (’081 and ’830 patents, claims 1-8, 17)

Plaintiff’s Proposal	Samsung’s Proposal
Plain and ordinary meaning.	“a vibration-generating device that can be incorporated in a wide variety of appliances, devices, and systems to provide vibrational forces”

The dispute boils down to what a “module” is. In Plaintiff’s view, a module is unbounded and can be anything. For example, based on Plaintiff’s infringement contentions, a phone that vibrates could be a “vibration module.” Samsung seeks to give life (and surely limits) to the term as a device that can be incorporated into another. Moreover, although Samsung’s construction is from the specification, it is simply an application of the *Phillips* standard in that the specification’s explanation of the term is consistent with and informs the term’s plain and ordinary meaning. In particular, the term “vibration module” is repeatedly, consistently, and exclusively used throughout the specification to refer to devices “that can be incorporated in a wide variety of appliances, devices, and systems to provide vibrational force.” ’081 patent, Abstract (“modules, that can be incorporated...”); *id.*, 3:7-10 (same); *id.*, 1:16-18 (“modules that

can be incorporated into a wide variety of different types of electro-mechanical devices and systems...”); *id.*, 4:15-16 (“modules (‘LRVMs’), that can be used within...”).

The description in the specification—i.e., that a module is a component that is incorporated into (or within) something else—is consistent with dictionary definitions of “module” at the time of the invention. *See, e.g.*, Ex. 14, -913 (defining module as, *inter alia*,³ “(1) a part that together with other parts makes up another structure or system”; and “(3) a self-contained piece of hardware that can be connected with other modules to form a new system.”); Ex. 15, -928 (defining module as something that “can be incorporated into a complete system” or something that is “used within a modular approach”).

As Dr. Forlines explains, these definitions are consistent with how a POSITA would have understood the term “module” and with Samsung’s construction because they indicate that a module is used “together with other parts,” “connected with other modules,” or “incorporated” to form a complete structure or system. Forlines Decl. ¶¶ 35, 37. Indeed, Plaintiff’s own expert refers to vibration modules as “**in**” other devices. Hooper Decl. ¶ 9 (“[I]t is also not uncommon to find vibrating modules that produce haptic feedback **in** handheld-devices...”⁴).

As to the language of Samsung’s proposed construction, though it is from the specification, it is not—as Plaintiff argues (*see* Dkt. 69, 3)—based on disclaimer or lexicography. Instead, it is simply language that is a reasonable articulation of the understood meaning. Alternatively, it would be equally reasonable for the Court to adopt the definition of “module” from a dictionary or otherwise craft its own—as long as the requirement that a “module” be incorporated or within another device is included.

³ Definition (2) concerns a software module, which is not relevant here.

⁴ All emphases are added unless otherwise noted.

B. “frequency” (’081 and ’830 patent claims 1, 2, 5, 6, 17)

Plaintiff’s Proposal	Samsung’s Proposal
Plain and ordinary meaning.	“rate of oscillation”

Contrary to Plaintiff’s argument (*see* Dkt. 69, 4), Samsung is not attempting to limit the term. Rather, Samsung’s construction is intended to confirm (and ensure) that the term has its full scope and encompasses both the specific vibration of the motor (*e.g.*, usually expressed in Hz) as well as the patterns described in the specification.

First, the inclusion of “oscillation” in Samsung’s construction aligns with how the term is used in the asserted claims (*i.e.*, based on the intrinsic evidence in the claims), which themselves specify that “frequency” refers to oscillation of the moveable component. ’081 patent, claim 1 (“moveable component to oscillate at a frequency”); *id.*, claim 2 (same as claim 1); *id.*, claim 5 (“frequency at which the control component drives the moveable component to ... oscillate”); *id.*, claim 5 (“oscillation of the movable component at a resonant frequency”); *id.*, claim 6 (“frequency at which the control component drives the moveable component to ... oscillate”); *id.*, claim 17 (same as claims 1 and 2).

Thus, Samsung’s construction refers to “frequency” as it is used in the claims, which clearly specifies that frequency refers to oscillation of the moveable component. Moreover, the term “frequency” is consistently used in the specification to mean “rate of oscillation” of the moveable component. The specification explains that the “frequency of the oscillation of the solid cylindrical mass is determined by the frequency at which the direction of the current applied to the coil [of the vibration module] is changed.” *Id.*, 5:43-45. The specification then discloses a variable “freq” representing “the current frequency at which the direction of the current is alternated in the coil” (*id.*, 6:57-59), which—as disclosed at 5:43-45—determines the frequency of oscillation of the moveable component. The specification also uses “Hz” as a

frequency unit. *E.g., id.*, 2:54-58. As Dr. Forlines explains, a Hertz (Hz) is a well understood unit of frequency equal to one event per second (i.e., a rate). Forlines Decl. ¶ 43. Each of these uses of frequency are consistent with a “rate of oscillation.”

That said, as the term “frequency” is used in the specification, it is not limited to Hz. For example, the disclosure pointed to by Plaintiff in its brief is an instance where frequency is not in Hz. Indeed, in reference that instance, Plaintiff argues that “frequency” may also refer to “the frequency at which the direction of the current applied to the coil is changed.” Dkt. 69, 4. Though truncated by the Plaintiff in its brief, when reading the entire sentence, this disclosure of frequency is still one that determines the rate of oscillation. *See* ’081 patent, 5:43-45 (“The frequency of the oscillation of the solid, cylindrical mass is determined by the frequency at which the direction of the current is applied by to the coil is changed.”). Moreover, in the context of complex vibrational modes such as producing “low frequency pulses of high frequency vibrations” or “lower-frequency beat-wave form[s].” ’081 patent, 13:16-33, Figs. 22A, 22B, 23. These “pulses” and “beat-wave forms” are also “oscillations” of the moveable component, as Dr. Forlines explains. Forlines Decl. ¶ 46. Thus, this usage of frequency is also consistent with a “rate of oscillation.” In other words, the specification discloses that frequency may encompass (1) the rate at which the moveable component repeats each back and forth oscillation during operation (which a POSITA would have understood could be measured in Hz either at a given point in time or as an average Hz over the duration of a vibration pattern); and/or (2) the rate at which an oscillation of interest (e.g., “beats”/“pulses” of the moveable component) are repeated during the vibration pattern over a given timeframe.

The extrinsic evidence confirms that a POSITA would have understood that “frequency” means “rate of oscillation.” For example, consistent with the understanding of frequency

explained above, the Oxford English Dictionary that Plaintiff identified in its P.R. 4-2 disclosures defines frequency as “the rate of recurrence of any regularly repeated event, *e.g.*, a vibration; the number of times it occurs in a second or other assumed unit of time.” Ex. 16, 2. In the Asserted Patents, the regularly repeated event of interest is either (1) each back and forth oscillation of the moveable component during operation; or (2) an oscillation of interest (*e.g.*, “beats”/“pulses” of the moveable component). Forlines Decl. ¶¶ 46-47.

Plaintiff incorrectly claims that other extrinsic evidence does not support Samsung’s construction. Dkt. 69, 5. This is incorrect. For example, the McGraw-Hill Concise Encyclopedia of Science and Technology indicates that a frequency is “the number of times that ... quantities specifying a wave vary (or oscillate) ... in a specified time.” Dkt. 69, Ex. 8, -916. This definition is consistent with a “rate” because it concerns the number of times an event occurs during a period of time. The definition also specifies that, in the case of a wave, the event of interest is the oscillation. The definitions identified by the parties are consistent with these definitions.

C. Indefiniteness of claims 4-6 (’081 and ’830 patents, claims 4-6)

Claim Term	Plaintiff’s Proposal	Samsung’s Proposal
“claim 1” (’081 and ’830 patents, claim 4)	“claim 3”; not indefinite.	Plain and ordinary meaning
“the one or more operational control outputs” (’081 and ’830 patents, claims 4, 5, 6)	Plain and ordinary meaning; not indefinite.	Indefinite/no antecedent basis
“the received output signals” / “the received output signals from the sensors” (’081 and ’830 Patents, claim 4)	Plain and ordinary meaning; not indefinite.	Indefinite/no antecedent basis
“the sensors” / “the one or more sensors” (’081 and ’830 Patents, claim 4)	Plain and ordinary meaning; not indefinite.	Indefinite/no antecedent basis

There is no antecedent basis for the terms “the one or more operational control outputs,” “the received output signals,” “the sensors,” and “the one or more sensors” in claim 4—and,

thereby, claims 5 and 6, which depend from claim 4. Plaintiff does not identify any antecedent basis, and instead asks the Court to judicially correct claim 4 to depend on claim 3. Dkt. 69, 5-6.

However, the Court cannot make such correction where, as here, the proposed correction is subject to reasonable debate. *Cellular Commc 'ns Equip. LLC v. AT&T, Inc.*, No. 2:15-CV-576-RWS-RSP, 2016 WL 7364266, at *10 (E.D. Tex. Dec. 19, 2016) (“Judicial correction of an error in a patent may be available ‘only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.’”) (quoting *Novo Industries, L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1354 (Fed. Cir. 2003)). Moreover, Plaintiff, as the party advocating for judicial correction, bears the burden of proof. *See Guzik Technical Enterprises, Inc. v. Western Digital Corp.*, No. 11-CV-03786-PSG, 2013 WL 3934892, at *27 (N.D. Cal. Jul. 29, 2013). Here, Plaintiff cannot show that its preferred correction—correction 2, below—is the only reasonable correction. Indeed, another equally plausible correction is to remove the definite article “the” before each of the terms (correction 1, below).

Correction 1

4. The [linear] vibration module of claim 1 wherein the control component adjusts ~~the~~ one or more operational control outputs of the control component according to the received output signals from ~~the~~ sensors in order that subsequent operation of ~~the~~ [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.

Correction 2

4. The [linear] vibration module of claim ~~1~~ **[3]** wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of the [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.

More importantly, the two interpretations of claim 4 result in equally plausible, but different, claim scope. Specifically, if the claim were corrected to be dependent on claim 3

(correction 2), the sensors would be required to be **within the [linear] vibration module**. *See* '081 and '830 patents, claim 3 (“wherein the control component receives output signals from sensors within the [linear] vibration module”). However, if correction 1 were applied, there would be no such restriction. *See* Forlines Decl. ¶¶ 54-55. The specification arguably supports both possible interpretations as it does not limit the location of “sensors” to just to those “**within the [linear] vibration module**.” *See, e.g.,* '081 patent, 6:2-8 (“The LRVM ... includes... one or more electromechanical sensors.”), 6:25-29 (“A power supply 612 provides power, as needed, to ... one or more sensors 632.”), Fig. 6 (depicting sensors 632 in a box diagram without limiting their location to be within the [linear] vibration module); *see also* Forlines Decl. ¶ 56. Thus, both corrections are equally plausible in light of the claims and the specification, and the correction is subject to reasonable debate. Forlines Decl. ¶¶ 52-53, 56.

This ends the inquiry. *Cellular Commc'ns Equip.*, 2016 WL 7364266, at *10 (“[T]he prosecution history is considered only to determine whether it is inconsistent with what is clear from the claim language and the specification.”). Nevertheless, it should be noted that the relevant prosecution histories also provide no guidance. The language of claim 4—and its dependency on claim 1—first appeared in the as-filed claims of the parent application to the '081 patent filed on January 6, 2012. Ex. 17, -300-01. Applicants then re-filed the same claim twice—first when filing the application that led to the '081 patent and again when filing the application that led to the '830 patent (although applicants removed “linear” from the '830 patent claims). Ex. 18, -066-67; Ex. 19, -256-57.

Thus, claim 4 issued with an error that cannot be corrected,⁵ and the two plausible

⁵ To note, Plaintiff could have sought correction at the Patent Office prior to filing this suit, but did not.

interpretations of claim 4 result in different scope. Where, as here, a court “cannot know what correction is necessarily appropriate or how the claim should be interpreted,” the claim must be found indefinite. *See Novo Industries*, 350 F.3d at 1358.

Plaintiff argues that it would be unlikely for the applicant to have accidentally inserted the word “the” three times into the claims, and that the “far more likely” error is in the dependency of the claim. Dkt. 69, 8. This is pure speculation as nothing suggests this is the more likely error. Plaintiff further argues that the proposed correction “will not impact the scope of the claim.” Dkt. 69, 8. This is incorrect as explained above. In this regard, Plaintiff’s citation to *Ollnova* is inapposite. In *Ollnova*, the requested correction clarified a grammatical error that the Court held would not affect the claim’s scope. *Ollnova Techs. Ltd. v. ecobee Techs., ULC*, No. 2:22-CV-00072-JRG, 2023 WL 2871051, at *5-6 (E.D. Tex. Apr. 10, 2023) (“Ollnova’s proposed correction will not impact the scope of the claim, as the correction aligns with how a skilled artisan would understand the limitation in its uncorrected form. In other words, even without judicial correction, the term is not indefinite...”). Here, Plaintiff seeks to change claim 4 in a way that would import limitations and change its scope.

D. “wherein the one or more operational control outputs is a control output that determines a current supplied by the power supply to the driving component and a frequency at which the control component drives the moveable component to [linearly] oscillate” (’081 and ’830 patents, claim 6)

Plaintiff’s Proposal	Samsung’s Proposal
Plain and ordinary meaning; not indefinite.	“wherein the one or more operational control outputs is a control output that determines a current supplied by the power supply to the driving component and <u>is</u> a frequency at which the control component drives the moveable component to [linearly] oscillate”

The dispute relates to the proper grammatical read of the claim, as informed by the surrounding claims and the written description. Samsung’s construction, consistent with the other claims and the specification, clarifies that the “one or more operational control outputs”

include two control outputs: (1) a control output that determines a current supplied by the power supply to the driving component; and (2) a control output that is a frequency. Plaintiff contends that the claim is met by a single operational control output that determines both current and frequency. Dkt. 69, 9. Plaintiff would improperly leave the issue to the jury.

In isolation, the language of claim 6 is ambiguous and could be read to refer to a control output that determines both current and frequency. However, the language could also be read to require two control outputs—one that determines a current and one that is a frequency. In such an instance, the specification is instructive. *World Class Tech. Corp. v. Ormco Corp.*, 769 F.3d 1120, 1123-24 (Fed. Cir. 2014) (instructing that when claim language “does not by itself convey a clear, unambiguous meaning,” we look to the specification to resolve the uncertainty).

Specifically, there is no disclosure in the specification of a single control output value that determines both current and frequency (Plaintiff’s proposal). In contrast, the specification discloses two separate operational control outputs, one that determines the current supplied by the power supply and another that is a frequency (Samsung’s proposal). In particular, at step 702 of Figure 7A, the system initiates as separate variables/values “strength” and “freq.” *See* ’081 patent, 6:47-61. The variable “strength” corresponds “to the electrical current applied to the coil,” while the variable “freq” is “the current frequency at which the direction of current is alternated in the coil.” *Id.* These control outputs are adjusted and outputted separately, as shown in step 762 of Figure 7C and accompanying text at 8:16-20 (showing output “p” to the power supply, which corresponds “to the currently selected strength, stored in the variable strength”) and Figures 7A and 7B (showing adjustment and control of frequency through the “freq” variable and “output d”). Importantly, the control of frequency cannot simply be an inherent characteristic of the “strength” variable (i.e., they are two separate variables). The key is that the

specification discloses a separate operational control output that “is” a frequency (*e.g.*, a frequency value) and not a control output that somehow is used to later “determine” frequency downstream. Accordingly, Plaintiff’s proposed read of the claim lacks any written description support.

Moreover, contrary to Plaintiff’s argument, the language in claim 5 does not clarify the ambiguity. In particular, claim 5 simply claims **one** of the output signals, not the other. Indeed, it could be argued that claim 5 supports Samsung’s proposed construction in that it is plausible that the original applicants meant to claim one of the signals (frequency) in claim 5 and both signals (current/strength and frequency) in claim 6. *See, e.g., Estech Sys. IP, LLC v. Carvana LLC*, No. 2-21-CV-00482-JRG-RSP, 2023 WL 3681720, at *5 (E.D. Tex. Jan. 30, 2023) (“The Court finds that [the same phrase appearing in three independent claims] is used consistently in the claims and is intended to have the same general meaning in each claim.”).

E. “tube” (’081 and ’830 patents, claim 8)

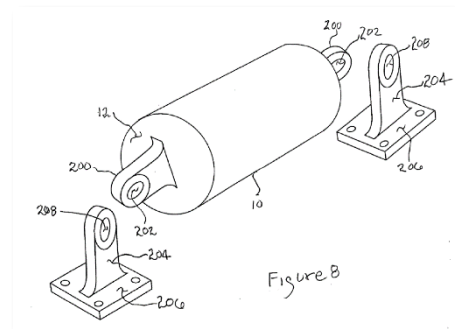
Plaintiff’s Proposal	Samsung’s Proposal
Plain and ordinary meaning.	“cylindrical housing”

The dispute is whether the claimed “tube” can be any shape (as Plaintiff contends) or must be cylindrical. The dispute is material as, for example, Plaintiff asserts that rectangular housings in the accused devices meet the “tube” limitation. To be sure, as Plaintiff points out, this is not classic lexicography. Dkt. 69, 11. That said, the specification does use the terms “tube” and “cylindrical housing” interchangeably, which is akin to being definitional. *See Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1282 (Fed. Cir. 2017) (“[T]he interchangeable use of [] two terms is akin to a definition equating the two.”); *see also Saffran v. Johnson & Johnson*, 712 F.3d 549, 560 (Fed. Cir. 2013) (holding interchangeable usage of “device” and “sheet” “suggests that the claimed ‘device’ should be understood as a

sheet”); *Bid For Position, LLC v. AOL, LLC*, 601 F.3d 1311, 1317 (Fed. Cir. 2010) (holding interchangeable use of “bid” and “value of the bid” suggests terms mean the same thing).

In particular, in describing Figures 4A-G, the specification states that “a coil of conductive wire 420 girdles the **cylindrical housing, or tube 402**,” and that a weight “can move linearly along the inner, hollow, cylindrically shaped chamber 406 within the **cylindrical housing or tube 402**.” ’081 patent, 4:49-5:4. Apart from this, the only other reference to “tube” in the Asserted Patents is the cylindrical housing of Figure 12. *Id.*, Fig. 12 (labeling the cylindrical housing as a “tube”). More importantly, the specification never describes, shows, or otherwise associates a “tube” with anything other than a cylindrical housing.

Further intrinsic evidence in the prosecution history supports the fact that the specification simply confirmed and used the term “tube” (i.e., to mean cylindrical) consistent with its understanding and use by POSITAs and others in the field at that time. Specifically, during prosecution of a parent application, Sahyoun was the basis of an obviousness rejection by the Patent Office. Ex. 20, -115-17. Sahyoun describes a linear motor in which a slider oscillates linearly within “tube 10.” Ex. 21, Sahyoun, ¶31. Tube 10 is shown in Figure 8 as cylindrical. Accordingly, Samsung is not, as Plaintiff wrongly accuses, importing a limitation, but simply applying the known and proper construction as understood by a POSITA, **as confirmed by the specification and intrinsic evidence.**



In contrast, Plaintiff’s only purported counterevidence is extrinsic. Specifically, apart from their own expert, Plaintiff relies entirely on a commercial marketing online catalog from a single vendor (Lowes.com) accessed from the internet on November 1, 2023. As a threshold

issue, this is not from the time of the invention and is thus entitled to less weight. *Ameranth, Inc. v. Par Tech. Corp.*, 2:10-CV-294-JRG-RSP, 2012 WL 3283357, at *5 (E.D. Tex. Aug. 10, 2012) (giving less weight to dictionary definition “not published until nearly a decade after the earliest filing date”). The material is also outside the Asserted Patents’ field. As Dr. Forlines explains, the online catalog is for use in construction, manufacturing, and engineering, and does not relate to the tubes used in the art of electronic consumer product design. Forlines. Decl. ¶ 76. Indeed, it would be assumed that had Plaintiff found any evidence in the field at the time—e.g., like Samsung has with Sahyoun above—Plaintiff would have presented it.

Moreover, in further contravention to Plaintiff’s extrinsic evidence, dictionaries from near the priority date of the Asserted Patents all define a tube as a “hollow [] cylinder.” *See* Ex. 22, -919; Ex. 23, -922; Ex. 24, -925. This is consistent with the specification and again evidences that Samsung’s construction does not improperly import a limitation, but rather articulates the ordinary meaning of “tube” as confirmed by (i.e., in light of) the intrinsic evidence.

F. “moveable component” (’081 and ’830 patents, claims 1, 2, 5-7, 17)

Plaintiff’s Proposal	Samsung’s Proposal
<p>Plain and ordinary meaning; not subject to 35 U.S.C. § 112 ¶ 6.</p> <p>If subject to 35 U.S.C. § 112 ¶ 6, then:</p> <p><u>Function</u>: moving</p> <p><u>Structures</u>: A moving weight. E.g., ’081 and ’830 Patents, Figs 4A-4G (weight 404), Fig. 6 (oscillating mass 634), Fig. 11 (moving mass 1102), Fig. 12 (moving mass with additional coils 1202 and 1204), Fig. 13 (moving mass/weight 1306), Fig. 14 (driving magnet 1406), Figs. 15, 16 (magnets 1506, 1508); and equivalents thereof</p>	<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p><u>Function</u>: Moving.</p> <p><u>Structure</u>: A moving weight. E.g., ’081 and ’830 Patents, Figs. 4A-4G (weight 404), Fig. 6 (oscillating mass 634), Fig. 11 (moving mass 1102), Fig. 12 (moving mass with additional coils 1202 and 1204), Fig. 13 (moving mass/weight 1306), Fig. 14 (driving magnet 1406), Figs. 15, 16 (magnets 1506, 1508)</p>

Although it does not contain the word “means,” “moveable component” is an archetype

of a means-plus-function term in that it combines a function—“moveable”—with the nonce word “component.” The test to overcome the presumption is whether the term is understood by a POSITA “to have a sufficiently definite meaning as the name for structure.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (en banc) (quotes omitted). The use of “well-known nonce word[s]” such as “module,” “mechanism,” “element,” or “device” is “tantamount to using the word ‘means’” because such words typically do not denote sufficiently definite structure. *Id.* at 1350; *see also* MPEP § 2181 (“The following is a list of non-structural generic placeholders that may invoke 35 U.S.C. 112[, ¶ 6]: ... ‘**component** for.’”). “[A] critical question is whether the claim term is used in common parlance or by [POSITAs] to designate structure, including either a particular structure or a class of structures.” *MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019) (quotes omitted).

Although not every claim term using the word “component” is means-plus-function, courts routinely hold that combinations of functional descriptions with the word “component,” as here, are subject to § 112, ¶ 6. *See, e.g., Umbanet, Inc. v. Epsilon Data Mgmt., LLC*, No. 2:16-cv-00682-JRG, 2017 WL 3508771, at *8 (E.D. Tex. Aug. 16, 2017) (“document-encoding component”); *Cypress Lake Software, Inc. v. ZTE (USA) Inc.*, No. 6:17-CV-00300-RWS, 2018 WL 4035968, at *14-15 (E.D. Tex. Aug. 23, 2018) (“navigation element handler component” and “navigation director component”). Here, a “moveable component” is not known in the art as a sufficiently definite name for structure and nothing in the intrinsic or extrinsic evidence imparts it with such structure. The term does not have a well-understood structural meaning in the field of electronic consumer product design, nor would it have been understood by a POSITA to connote a specific class of structures. Forlines Decl. ¶ 82. Nor do the claims provide any indication of structure, indicating only that the moveable component is driven “in each of two

opposite directions within the housing” or “to oscillate within the housing.” This provides no structural information—essentially any component can perform these functions.

The specification does not define a moveable component to refer to any particular structure either. The only mention of a “moveable component” in the specification is with regard to Figure 14 and a “moveable-component track” (’081 patent, 9:67-10:4), which does not impart any structure to the term “moveable component.” Nor is there any relevant discussion in the prosecution histories. Thus, the intrinsic evidence does not indicate that the term “moveable component” refers to a sufficiently definite class of structures. Forlines Decl. ¶¶83-85.

Plaintiff argues that the moveable component does not recite a function. Dkt. 69, 12. This is incorrect. The function of the moveable component is to move. Plaintiff’s expert Dr. Hooper agrees that the claims “require that [the moveable component] be moveable.” Hooper Dec. ¶ 44. Thus, Dr. Hooper’s opinion that this does not constitute a function does not make sense. Plaintiff further argues that “the claim makes clear how the moveable component interacts with other recited structural elements.” Dkt. 69, 13. But Plaintiff provides no explanation of how the claim shows these interactions. The claim only gives general information about the moveable component—that it is contained in a housing and is driven to move.

Because neither the claims, specification, nor prosecution history would have been understood by a POSITA to confer structure to the term “moveable component,” and because this term does not have well known structure in the art, the Court should construe the “moveable component” as a means-plus-function term and adopt the structure agreed on between the parties.

G. “driving component that drives the moveable component [in each of two opposite directions/to oscillate] within the housing” (’081 and ’830 patents, claim 1)

Plaintiff’s Proposal	Samsung’s Proposal
Subject to 35 U.S.C. § 112 ¶ 6.	Subject to 35 U.S.C. § 112 ¶ 6.

Plaintiff's Proposal	Samsung's Proposal
<p><u>Function:</u> driving the moveable component [in each of two opposite directions/to oscillate] within the housing</p> <p><u>Structures:</u> One or more coils or electromagnets. E.g., '081 and '830 Patents, Figs 4A-4G (coil 420); Fig. 5A (coil 514), Fig. 6 (coil 626), electromagnet of Fig. 10, electromagnet of Fig. 11, Fig. 12 (coil 1206), Fig. 13 (first coil 1302 and second coil 1304), Fig. 14 (coils 1412 and 1414), Figs. 15, 16 (coil 1510), stator coils of Figures 24A, 24B, and 25; and equivalents thereof</p>	<p><u>Function:</u> driving the moveable component [in each of two opposite directions/to oscillate] within the housing</p> <p><u>Structure:</u> One or more electromagnetic coils. E.g., '081 and '830 Patents, Figs. 4A-4G (coil 420), Fig. 5A (coil 514), Fig. 6 (coil 626), electromagnet of Fig. 10, electromagnet of Fig. 11, Fig. 12 (coil 1206), Fig. 13 (first coil 1302 and second coil 1304), Fig. 14 (coils 1412 and 1414), Figs. 15, 16 (coil 1510), stator coils of Figures 24A, 24B, and 25</p>

The parties agree that this is a means-plus-function term. The dispute is whether—as Plaintiff incorrectly contends—the structure includes “electromagnets” that are not coils. It does not. The Asserted Patents do not disclose embodiments of electromagnets except for coils. Even when the specification generically refers to “electromagnets” in describing the embodiments, it is clear that these electromagnets are coils. *See, e.g.*, '081 patent Figs. 10 and 11 (depicting the electromagnets as coils). Plaintiff does not identify an embodiment of a non-coil electromagnet. Instead, Plaintiff points to disclosure at the end of the specification that refers to “electromagnets.” Dkt. 69, 14 (citing '081 patent, 15:1-5). This appears in a paragraph stating that “it is not intended that the invention be limited to [the] embodiments.” '081 patent, 14:39-41. Plaintiff may not identify corresponding structures that the patent does not disclose. *See Williamson*, 792 F.3d at 1347-48; *Uniloc USA, Inc. v. Samsung Elecs. Am., Inc.*, No. 2:18-CV-0042-JRG-RSP, 2019 WL 11023944, at *12 (E.D. Tex. Apr. 18, 2019) (“The standard before this Court is not what structure *could* perform the claimed function. Instead, the standard is whether the specification or prosecution history clearly links or associates that structure to the function recited in the claim.”) (emphasis in original). Further, as Dr. Forlines explained, non-

coil electromagnets would require different control mechanisms than electromagnetic coils, and those control mechanisms are also not disclosed. Forlines Tr. at 82:11-18, 84:17-85:5.

Plaintiff also invokes claim differentiation. Dkt. 69, 14 (noting that claim 8 requires that “the driving component is an electromagnetic coil”). Plaintiff is incorrect for two reasons. First, claim differentiation cannot override the statutory limitation under § 112 ¶ 6. *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) (“A means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure”). Second, claim 8 limits the driving component to an “electromagnetic coil.” Samsung’s proposed structure for claim 1 is broader (“one or more electromagnetic coils”) and does not render claim 8 superfluous.

H. “control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features/one or more stored values]” (’081 and ’830 patents, claim 1)

Plaintiff’s Proposal	Samsung’s Proposal
<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: controlling supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features / one or more stored values]</p> <p>Structures: oscillator circuit; microcontroller with internal or external memory; processor; CPU; microprocessor; and equivalents thereof</p> <p>[if an algorithm is required] Where the corresponding structure is a processor, CPU, or microprocessor, the processor/CPU/microprocessor is programmed with an algorithm comprising the following steps: (a) set the mode and strength to [default values or] values representing selections made by user input to the user input features; and (b) provide a corresponding output to the power supply so that the power</p>	<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: controlling supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features / one or more stored values]</p> <p>Structure: Processor programmed with an algorithm to perform the following steps: (1) set the mode and strength to [default values or] values</p>

Plaintiff's Proposal	Samsung's Proposal
<p>supply provides a corresponding output to the driving component</p> <p><i>See, e.g.,</i> '081 patent at 7:10-24, 8:10-20, Figs. 7A, 7C; '830 patent at 7:20-34, 8:20-30, Figs. 7A, 7C</p> <p>In the alternative, if the Court finds that a three-step algorithm is necessary, then RevelHMI proposes that the following three-step algorithm (which Samsung proposed in its IPR petitions) be adopted by the Court: (1) set the mode and strength to [default values or] values represented by selections made by user input to the user input features, (2) provide a corresponding output to the power supply, and (3) provide a corresponding output to an H bridge switch.</p>	<p>represented by selections made by user input to the user input features, (2) provide a corresponding output to the power supply, and (3) provide a corresponding output to the driving component. '081 Patent at 6:32-35, 7:10-24, 8:10-20, Figs. 7A, 7C; '830 Patent at 6:40-44, 7:20-34, 8:20-30, Figs. 7A, 7C.</p>

The parties agree that “control component” is a means-plus-function term and agree as to the claimed function. Samsung’s proposed structure—a processor that performs a three-step algorithm—follows directly from the specification. Plaintiff’s proposed structure, on the other hand, contains multiple errors described below.

1. The “oscillator circuit” is not corresponding structure for the “control component”

The oscillator circuit is not corresponding structure because it is incapable of performing the claimed function. *See Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005) (“The specification must be read as a whole to determine the structure capable of performing the claimed function.”) (quotation omitted).

The claimed function requires controlling the supply of power to the driving component cause the moveable component to oscillate at a specified **frequency and amplitude**. The disclosed “oscillator circuit” is not capable of causing oscillation at a specified **amplitude**. The specification explains that “lower-cost linear-vibration modules can be designed and manufactured by replacing the processor or microcontroller (602 in FIG. 6) of the above-described linear-resonant vibration module with a simpler oscillator circuit with additional

control circuitry.” ’081 patent, 11:43-47. The specification discloses one “example implementation” where a “variable-frequency oscillator circuit can be controlled by user input to drive the H switch or other H-switch-like circuit to operate the linear vibration module at **different frequencies.**” *Id.* at 11:59-63. But there is no disclosure that this “variable-frequency oscillator circuit” is capable of controlling amplitude. *See* Forlines Decl. ¶ 109. Thus, the oscillator circuit cannot be corresponding structure.

Plaintiff points to disclosures that the user of a vibration module with an oscillator circuit can “increase and decrease the amplitude of vibration.” Dkt. 69, 17. But the specification explains that amplitude is separately controlled by an “input feature”—not the oscillator circuit. ’081 patent, 11:66-12:3. The oscillator circuit is not disclosed to be capable of controlling the amplitude of vibration. Additionally, the structure of the “input feature” and associated circuitry is not sufficiently disclosed to enable amplitude control. *See id.* Plaintiff also argues that dependent claim 2 indicates that the “control component of claim 1 can be an oscillator circuit.” Dkt. 69, 17. That is incorrect. Claim 2 recites “an [sic] variable oscillator circuit **with additional control circuitry.**” Thus, it indicates that the variable oscillator circuit is insufficient to perform the function without additional control circuitry (the structure of which is not disclosed). Regardless, Plaintiff cannot use a dependent claim to expand the scope of a means-plus-function term beyond the structures disclosed in the specification. *See Laitram Corp.*, 939 F.2d at 1538.

2. An algorithm is required for the “control component”

The structure of a means-plus-function term must be “more than simply a general purpose computer or microprocessor.” *Aristocrat Techs. Australia Pty Ltd. v. Intern. Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). There is no distinction in the Asserted Patents between a processor and microcontroller, which are used interchangeably. *E.g.*, ’081 patent, 10:53-57 (“including a **processor or microcontroller** within a linear-resonant vibration module

allows ...”), 11:43-47 (“...by replacing the **processor or microcontroller**...”), 12:31-35 (“A **processor or microcontroller-controlled** linear-resonant vibration module ...”), 12:31-35, 12:36-39, 12:48-51, 13:10-13, 13:34-41, 14:60-64. This is consistent with the understanding of a POSITA, who would have understood that a microcontroller, just like a processor, would require special programming to perform the complex functions of the control component claimed in the Asserted Patents. Forlines Decl. ¶ 111. Indeed, as Dr. Forlines explains, a POSITA would have understood that there is no “off-the-shelf” component—whether it is called a processor, microprocessor, microcontroller, or CPU—that is capable of performing the claimed function, and special purpose programming would be required. *Id.*

Thus, the Court should adopt Samsung’s proposed structure, which is a “processor”⁶ programmed with an algorithm disclosed in the patents for performing the function.

Plaintiff incorrectly contends that an algorithm is not required if the corresponding structure is a microcontroller⁷ because a microcontroller “provides more specific functionality sufficient to perform the claimed function without additional special programming.” Dkt. 69, 18. Plaintiff’s only support is Dr. Hooper’s declaration, which states that a microcontroller “provides functionality more specifically relating to the claimed inventions.” *Id.* (citing Hooper Decl. ¶ 49). Dr. Hooper’s *ipse dixit* contradicts the intrinsic evidence equating “processor” and “microcontroller” and fails to identify a “microcontroller” that performs **the claimed functionality** without additional special programming. Thus, Dr. Forlines’ testimony stands

⁶ “Processor” is intended to encompass a CPU, microprocessor, or microcontroller. Samsung is amenable to including these terms in the proposed structure—so long as the algorithm Samsung proposes is included.

⁷ Plaintiff also contends that no algorithm is required if the corresponding structure is an oscillator circuit. As explained, the oscillator circuit cannot be corresponding structure because it does not perform the claimed function.

unrebutted.⁸ Moreover, courts have found that—just like a processor—a “microcontroller” requires an algorithm. *UUSI, LLC v. United States*, 131 Fed. Cl. 244, 271 (Fed. Cl. Apr. 17, 2017) (“When the corresponding structure is a **microcontroller or microprocessor, the structure is limited by the disclosed algorithms** in the specification.”); *Universal Elecs., Inc. v. Roku, Inc.*, No. 2021-1992, 2023 WL 5316526, at *7 (Fed. Cir. Aug. 18, 2023) (finding Board’s construction requiring a “**microcontroller that performs [an] algorithm**” was appropriate means-plus-function construction) (quotes omitted).

In this regard, *HTC Corp. v. IPCOM GmbH, KG* (see Dkt. 69, 18) does not support Plaintiff. There, the court held that “[t]he district court ... did not err in finding that the specification disclosed a processor and transceiver to one of skill in the art, and that no additional hardware disclosure was needed.” *HTC Corp.*, 667 F.3d 1270, 1280 (Fed. Cir. 2012). The court specifically noted that an algorithm was required (*id.* at 1280), but this issue was waived because it was not raised below. *Id.* at 1283 (agreeing that “the structure ... must include an adequate algorithm,” but finding the argument waived).

3. Plaintiff’s two-step algorithm is insufficient to perform the claimed function

The claimed function requires controlling the moveable component to oscillate at a specified frequency and amplitude. The patents disclose two different mechanisms, one for controlling amplitude and one for controlling frequency. To control amplitude, the algorithm of Figure 7C sets a variable “strength” to the currently selected strength and outputs a value “p” to

⁸ Plaintiff cites Dr. Forlines’ deposition (see Dkt. 69, 18), where he testified that “the vast majority of people use” microprocessor and microcontroller “interchangeably,” but there is a difference in that a “microcontroller is something that you find in your dishwasher where the various control algorithms are partially ... hardened into the design of the chip.” Forlines Tr., 60:3-61:5. The fact remains that the patents equate “microcontroller” and processor and there was no off-the-shelf component to perform the claimed function without special programming.

the power supply so that the power supply “outputs an appropriate current to the coil.” *Id.* at 8:10-20, Fig. 7C. But varying the **amount** of current output to the coil is insufficient to control the frequency of oscillation. The patents disclose that frequency is controlled separately in algorithms illustrated in Figures 7A-B through manipulation of the “freq” variable and the “d” control output. Forlines Decl. ¶115. The correct corresponding structure thus requires an output both to the power supply to control the current (output “p”) and to the driving component to control the frequency (output “d”).⁹ This is reflected in Samsung’s algorithm.

The two-step algorithm Plaintiff proposes (*see* Dkt. 69, 20) is insufficient because it provides an output only to the power supply. This output corresponds with the output “p” from the specification. ’081 patent, 8:10-20, Fig. 7C. Plaintiff’s algorithm does not interact with the variable “freq” or the “d” control output, and thus is incapable of causing the moveable component to operate at a specified frequency as claimed. Forlines Decl. ¶115. Plaintiff counters that “[a] POSITA would recognize that the processor’s output to the power supply could include both amplitude and frequency control information.” Dkt. 69, 20. But Plaintiff does not identify any disclosure in the specification of such structure, and Plaintiff is not entitled to undisclosed structures even if a POSITA could conjure them up. *See Synchronoss Techs., Inc. v. Dropbox, Inc.*, 987 F.3d 1358, 1367 (Fed. Cir. 2021) (holding that it is insufficient for an expert to identify “many ways in which a system could perform [the function]”).

4. Plaintiff’s three-step algorithm recites unnecessary structure

Plaintiff proposes, for the first time in its opening brief, an alternative three-step algorithm that includes providing an output to an H Bridge switch. *Compare* Dkt. 69, 15 *with*

⁹ Samsung does not contend that the output to the driving component cannot go through an intermediary component, such as the H Bridge switch disclosed in the specification. *See* Dkt. 69, 19 n.5.

Dkt. 65 (P.R. 4-3 Statement). Plaintiff notes that Samsung included the H Bridge in the IPRs. Dkt. 69, 21-22. There, however, Samsung needed to ensure against the possibility that the Board found it was required. Based on the specification, however, the H bridge is an optional implementation that allows the control component to communicate a frequency to the driving component. '081 patent, 5:61-65 (“The H-bridge switch ... is but one example of various different types of electrical and electromechanical switches that can be used.”). As Dr. Forlines explains, the H Bridge communicates control signals from the control component to the driving component and is not a necessary structure of the control component itself. Forlines Decl. ¶ 113.

I. “wherein the control component receives output signals from sensors within the [linear] vibration module during operation of the [linear] vibration module and adjusts one or more operational control outputs of the control component according to the received output signals from the sensors” ('081 and '830 patents, claim 3)

Plaintiff’s Proposal	Samsung’s Proposal
<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: receiving output signals from sensors within the [linear] vibration module during operation of the [linear] vibration module and adjust one or more operational control outputs of the control component according to the received output signals from the sensors</p> <p>Structures: oscillator circuit; microcontroller with internal or external memory; processor; CPU; microprocessor; and equivalents thereof</p> <p>[if an algorithm is required] Where the corresponding structure is a processor, CPU, or microprocessor, the processor/CPU/microprocessor is programmed with an algorithm comprising the following steps: (a) receive the value of an output signal; (b) compare that value to a different value, which could be a previous value; and (c) adjust one or more operational control outputs based on that comparison</p>	<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: receiving output signals from sensors within the [linear] vibration module during operation of the [linear] vibration module and adjusting one or more operational control outputs of the control component according to the received output signals from the sensors</p> <p>Structure: Claim 1 structure with the processor further programmed with an algorithm to perform the following steps: (1) convert the received output signal into an integer, (2) compare that integer to a specific value, (3) adjust one or more operational control outputs based on that comparison. '081 Patent at 7:13-18, 7:32-8:9, Figs. 7A, 7B; '830 Patent at 7:23-29, 7:42-8:19, Figs. 7A, 7B.</p>

Plaintiff's Proposal	Samsung's Proposal
<i>See, e.g.</i> , '081 patent at 7:13-18, 7:32-8:9, Figs. 7A, 7B; '830 patent at 7:23-28, 7:42-8:19, Figs. 7A, 7B	

As explained, Plaintiff's inclusion of an oscillator circuit as corresponding structure is incorrect. *See* Section IV.H.1. In addition, for claim 3, the oscillator circuit cannot be corresponding structure because there is no disclosure of an oscillator circuit capable of receiving or using sensor output signals. Forlines Decl. ¶ 124. Plaintiff also again incorrectly asserts that no algorithm is required for the microcontroller. *See* Section IV.H.2. Moreover, claim 3's function adds complexity that could not be implemented by any off-the-shelf component without special programming. Forlines Decl. ¶¶ 125-126.¹⁰

The parties' additional dispute is whether the corresponding structure requires converting received sensor input into an integer (steps 1 and 2 of Samsung's algorithm). Here, the specification is clear that the feedback algorithm of Fig. 7B "converts the sensor input to an integer representing the current vibrational force produced by the LRVM and stores the integer value in the variable lv11." '081 patent, 7:33-36. This conversion is a critical and necessary step because, as a POSITA would have understood, comparing the value of integers is a straightforward computing operation. In contrast, making a comparison using raw sensor output would require a complex, sensor-dependent algorithm. Forlines Decl. ¶128.

Plaintiff's algorithm does not convert to an integer and Plaintiff claims that this step is not necessary to perform the function. Dkt. 69, 23. This is incorrect. Although Plaintiff theorizes about other methods of comparing sensor output (*id.*), none are disclosed. Thus, they cannot be corresponding structure. *See Synchronoss Techs.*, 987 F.3d at 1367; *Uniloc USA*, 2019

¹⁰ These arguments also apply to claims 4-6 and are not repeated in Sections IV.J-L.

WL11023944, at *12. Instead of converting the received sensor output to an integer, Plaintiff's step (a) "receive(s) the value of an output signal." This does not match the function, which recites "receiving output signals" not "the value of an output signal." Plaintiff does not explain how this step is supported by the specification.

J. "wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of the [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters" ('081 and '830 patents, claim 4)

Plaintiff's Proposal	Samsung's Proposal
<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: adjusting the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of the [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters</p> <p>Structures: Same structure as described above with respect to claim 3.</p>	<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: adjusting the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of the [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters</p> <p>Structure: Claim 1 structure with the processor further programmed with the same claim 3 algorithm.</p>

Plaintiff's proposed construction of the "control component" of claim 4 is incorrect for all the reasons given with respect to the "control component" of claim 3 in section IV.H-I above.

K. "wherein the one or more operational control parameters is a strength of vibration produced by the [linear] oscillation of the moveable component; and wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to [linearly] oscillate, the control component dynamically adjusting the power supplied to the driving component to produce [linear] oscillation of the movable component at a resonant frequency for the linear vibration module" ('081 and '830 patents, claim 5)

Plaintiff's Proposal	Samsung's Proposal
<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: dynamically adjusting the power supplied to the driving component to produce [linear] oscillation of the movable component at a resonant frequency for the [linear] vibration module</p> <p>Corresponding structures: oscillator circuit; microcontroller with internal or external memory; processor; CPU; microprocessor; and equivalents thereof</p> <p>[if an algorithm is required] Where the corresponding structure is a processor, CPU, or microprocessor, the processor/CPU/microprocessor is programmed with an algorithm comprising the following steps: (a) if the frequency at which the device operates has been increasing and the vibrational force is greater than the previously sensed vibrational force, then increase the frequency—otherwise decrease the frequency; and (b) if the frequency at which the device operates has not been increasing and the vibrational force is greater than the previously sensed vibrational force, then decrease the frequency—otherwise increase the frequency</p> <p><i>See, e.g., '081 patent at 7:38-42, 7:50-8:9, Fig. 7B; '830 patent at 7:48-52, 7:60-8:19, Fig. 7B</i></p>	<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: Claim 4 function wherein the one or more operational control parameters is a strength of vibration produced by the [linear] oscillation of the moveable component; and wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to [linearly] oscillate, the control component dynamically adjusting the power supplied to the driving component to produce [linear] oscillation of the movable component at a resonant frequency for the [linear] vibration module.</p> <p>Structure: Claim 1 structure with the processor further programmed according to the “default” algorithm illustrated in Figure 7B which comprises the following steps: (1) storing sensor input representing the current vibrational force in a variable; (2) checking a previously set variable to determine if the rate of oscillation of the movable component is increasing; (3) if the rate of oscillation of the movable component is increasing and the vibrational force is greater than the previously measured vibrational force, increasing the rate of oscillation of the movable component, otherwise decreasing the rate of oscillation of the movable component; and (4) if the rate of oscillation of the movable component is not increasing and the vibrational force is greater than the previously measured vibrational force, decreasing the rate of oscillation of the movable component, otherwise increasing the rate of oscillation of the movable component. '081 Patent at 7:38-42, 7:50-8:9, Fig. 7B; '830 Patent at 7:48-52, 7:60-8:19, Fig. 7B.</p>

1. The function includes the “wherein” clauses of claim 5

Plaintiff's construction improperly truncates the function and corresponding algorithm. Claim 5 depends on claim 4 and thus incorporates its limitations, including a “control component” that performs claim 4 function with the corresponding structure discussed above in

sections IV.J. The “wherein” clauses of claim 5 impose limitations on the “one or more operational control parameters” and the “one or more operational control outputs,” which are terms appearing in claim 4. Thus, in claim 5, the function of the control component is modified to incorporate these further limitations. Forlines Decl. ¶¶ 144-145.

Plaintiff mistakenly asserts that claim 5’s “wherein” clauses do not modify the function of the “control component.” Plaintiff misunderstands claim 5’s structure and the law. Courts routinely incorporate a “wherein” clause into the function where the clause modifies an aspect of the function. *Finesse Wireless LLC v. AT&T Mobility LLC*, No. 2:21-CV-00316-JRG, 2022 WL 3686478, at *10 (E.D. Tex. Aug. 24, 2022) (“the ‘wherein’ clause does not recite structure, but rather concerns the function of the sampling unit”); *id.* at *11 (including in the function a “wherein” clause modifying “estimations of the isolated interfering signals” recited in functional language); *Optis Wireless Tech., LLC v. Apple Inc.*, No. 2:19-CV-00066-JRG, 2020 WL 1692968, at *17-18 (E.D. Tex. Apr. 7, 2020); *ContentGuard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 1289321, at *51 (E.D. Tex. Mar. 20, 2015); *MobileMedia Ideas LLC v. HTC Corp.*, No. 2:10-CV-112-JRG, at *18-19 (E.D. Tex. Dec. 10, 2012).

2. Plaintiff’s proposed algorithm omits necessary steps

Both parties propose algorithms that require determining whether “the frequency at which the device operates has been increasing and the vibrational force is greater than the previously sensed vibrational force.” But Samsung also—correctly—proposes required steps disclosed in the specification that enable the “control component” to make these determinations.

Samsung’s algorithm explains that the “control component” “stor[es] sensor input representing the current vibrational force in a variable” and “check[s] a previously set variable to determine if the rate of oscillation of the movable component is increasing.” These steps correspond to the function. ’081 patent, 7:33-36, 7:50-57, Fig. 7B (steps 730; 736). Specifically,

they enable the “control component” to determine if the rate of oscillation and vibrational forces are increasing or decreasing, which is necessary to perform the function. Forlines Decl. ¶ 149.

Plaintiff’s claim that these steps are not necessary is conclusory and lacks reasoning. Dkt. 69, 28.

- L. “wherein the one or more operational control parameters include both a strength of vibration produced by the linear oscillation of the moveable component and a current operational mode; and wherein the one or more operational control outputs is a control output that determines a current supplied by the power supply to the driving component and a frequency at which the control component drives the moveable component to [linearly] oscillate” (’081 and ’830 patents, claim 6)**

Plaintiff’s Proposal	Samsung’s Proposal
<p>Plain and ordinary meaning; not subject to 35 U.S.C. § 112 ¶ 6.</p> <p>If subject to 35 U.S.C. § 112 ¶ 6 and Samsung’s function is accepted, then:</p> <p>Structures: oscillator circuit; microcontroller with internal or external memory; processor; CPU; microprocessor; and equivalents thereof</p> <p>[if an algorithm is required] Where the corresponding structure is a processor, CPU, or microprocessor, the processor/CPU/microprocessor is programmed with an algorithm comprising the following steps: (a) set the mode and strength to [default values or] values representing selections made by user input to the user input features; and (b) provide a corresponding output to the power supply so that the power supply provides a corresponding current to the driving component</p> <p><i>See, e.g., ’081 patent at 7:10-24, 8:10-20, Figs. 7A, 7C; ’830 patent at 7:20-34, 8:20-30, Figs. 7A, 7C</i></p>	<p>Subject to 35 U.S.C. § 112 ¶ 6.</p> <p>Function: Claim 4 function wherein the one or more operational control parameters include both a strength of vibration produced by the [linear] oscillation of the moveable component and a current operational mode; and wherein the one or more operational control outputs is a control output that determines a current supplied by the power supply to the driving component and a frequency at which the control component drives the moveable component to [linearly] oscillate.</p> <p>Structure: Indefinite</p>

Plaintiff denies that claim 6 recites additional structure for the “control component” and in the alternative identifies structure unrelated to claim 6’s limitations. Plaintiff cannot identify corresponding structure because none is disclosed, and claim 6 is indefinite. *See, e.g., Media Rts. Techs., Inc. v. Cap. One Fin. Corp.*, 800 F.3d 1366, 1375 (Fed. Cir. 2015) (agreeing with district

court that “compliance mechanism” was a means-plus-function term and was indefinite because the specification failed to disclose an algorithm for all of its functions).

1. The “wherein” clauses modify the function of the control component

Claim 6 depends on claim 4 and incorporates its limitations, including a “control component” that performs claim 4’s function with the corresponding structure discussed in sections IV.J. Claim 6’s “wherein” clauses impose further limitations on the “one or more operational control parameters” and the “one or more operational control outputs,” which are terms appearing in claim 4. Thus, in claim 6, the control component’s function is modified to incorporate these further limitations. Forlines Decl. ¶¶156-157. As with claim 5, Plaintiff is incorrect that the “wherein” clauses do not modify the control component’s function. As explained, courts routinely incorporate “wherein” clauses into the function. *E.g., Finesse Wireless LLC*, 2022 WL 3686478, at *10.

2. The Asserted Patents do not disclose corresponding structure for adjusting a control output that determines a current based on sensor output signals

The patents disclose no algorithm for adjusting an operational control output according to output signals from sensors wherein one of the operational control outputs is a “control output that determines a current supplied by the power supply to the driving component.” **At most, the patents disclose adjusting a frequency** according to the vibrational force measured by sensors. ’081 patent, 7:13-18, 7:32-8:9, Figs. 7A, 7B. An algorithm for adjusting frequency is provided in Figure 7B, which is explained in connection with claim 5 above. But a POSITA would not have understood the patents to disclose an algorithm for adjusting a “control output that determines a current supplied by the power supply to the driving component.” Forlines Decl. ¶ 163. The closest disclosure concerns the “output value p” which is outputted “to the power supply so that the power supply outputs an appropriate current to the coil.” ’081 patent, 8:16-20. **But the**

patents disclose adjusting “p” (i.e., current) according to user input—not sensor output signals as claimed. *Id.* (“the routine ‘control’ computes an output value p corresponding to the currently selected strength”).

If the Court determines that claim 6 claims a single operational control output that determines both current and frequency (*see* Section IV.D), the patents still do not disclose corresponding structure. The patents disclose an algorithm for adjusting frequency (Figure 7B) and further disclose an “output value p” that is adjusted according to user input. But the patents **do not disclose** an operational control output that **determines both current and frequency**, let alone an algorithm to adjust such an output according to sensor output. Forlines Decl. ¶ 164.

Plaintiff proposes an algorithm that does not even mention sensor output. Plaintiff’s algorithm is insufficient to adjust a control output that determines a current according to output signals from sensors. Forlines Decl. ¶ 162.

V. PLAINTIFF’S CITATIONS TO SAMSUNG’S IPRS ARE UNAVAILAING

Plaintiff cites Samsung’s IPR petitions to argue that its constructions for claims 5 and 6 are “unprincipled, as they presumably would have been made in Samsung’s IPR petitions if they were meritorious.” Dkt. 69, 26. As the Court is aware, the practice and requirements for filing an IPR petition are different from District Court proceedings. In particular, different positions taken in an IPR related to indefinite terms are unpersuasive “because an IPR petition cannot assert indefiniteness.” *Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson*, No. 2:22-CV-00282-JRG, Dkt. 176 at 25 (E.D. Tex. Oct. 14, 2023); *see also Lionra Techs. Ltd. v. Fortinet, Inc.*, No. 2:22-CV-322-JRG-RSP, Dkt. 162 at 30 (E.D. Tex. Nov. 27, 2023).

VI. CONCLUSION

For the foregoing reasons, Samsung respectfully requests that the Court adopt Samsung’s constructions of the disputed terms.

Dated: January 18, 2024

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CERTIFICATE OF SERVICE

The undersigned certifies that on January 18, 2024, all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document through the Court's CM/ECF system under Local Rule CV-5.

/s/ Melissa R. Smith

Melissa R. Smith